

Ship Feb 04

Work Order ID 141138

141138

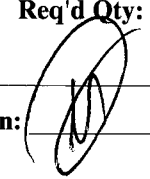
Page 1

Thursday, January 28, 2016 9:57:33 AM

Item ID: 647.1305 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 2/4/2016 Req'd Qty: 1.00 *1* Customer:

Reference:

Approvals: Process Plan:  Date: 1-1-18 Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
647.1300	D		DAS 6						
100	Document Control	0.00	9-89						MCS 16-01-29
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPP 647.1305								
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.00							
Quality Control									

FEB 0 6 2016
 FEB 0 6 2016
 JAN 28 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 141138***141138***

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Thursday, January 28, 2016 9:57:33 AM

Item ID: 647.1305 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible
Start Date: 1/28/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 2/4/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

130

Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPP 647.1305
Location: _____

EXPIRY DATE OF:

RTV Loctite 598: _____

MAGNOBOND 6398 PART 1: _____

MAGNOBOND 6398 PART 2: _____

SEALANT PR-1425: _____

***INDICATE ON BOX EXPIRY DATE OF RTV, MAGNOBOND PART1,
MAGNOBOND PART2 AND SEALANT PR-1425 ***

SAS
27
9-89
FEB 04 2016

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

*** Enter exp. date in lot maintenance for RTV loctite 598, MAGNOBOND
PART1, MAGNOBOND PART2 AND SEALANT PR-1425***

MCS **FEB 04 2016**

Quality Control

MCS **FEB 04 2016**

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____							
Misidentified ☐	☐ Past Due								

Picklist Print

Thursday, January 28, 2016 9:57:37 AM

Page 1

Work Order ID: 141138

141138

Parent Item: 647.1305

647 1305

Parent Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016

Required Date: 2/4/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A NEW ISSUE 13.07.16 JLM VERIFIED BY:DD IPP
REV:B 14.07.31 AS PER ECN C2 DD VERF:JLM IPP REV:C
15.07.09 AS PER REV D DD VERIFIED BY:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
647.1402 *647 1402* Lower Cutter Assembly		Manufactured	No				Each	0.0000	**	1			
647.1601 27 9-89 *647 1601* Wiper Deflector Aft		Manufactured	No				Each	1.0000	**	1			DAS 28 9-89
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						DAS 6 9-89
					CCK091	1							DAS 28 9-89
					138077	1							
647.1610 27 9-89 *647 1610* Wiper Deflector Fwd		Manufactured	No				Each	7.0000	**	1			DAS 28 9-89
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						DAS 9-89
					CCK091	7							DAS 6 9-89
					92599	3							
					M130388	4							
647.0112 *647 0112* Strut Bracket		Manufactured	No				Each	51.0000	**	1			DAS 28 9-89
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						DAS 9-89
					CCK107	51							DAS 6 9-89
					M130388	51							

JAN 28 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			

Picklist Print

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Work Order ID: 141138

141138

Parent Item: 647.1305

647 1305

Parent Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016

Required Date: 2/4/2016

Start Qty: 1.00

Required Qty: 1.00

647.2011 Manufactured No

Each 21.0000

647 2011
Lower Strut

**

DAS
6
9-89 DAS
28
9-89

BAS
27
9-89

Location

Loc Qty

Loc Code

Cck021

21

123511

9

125082

10

92560

2

NAS6604-66 Purchased No

Each 104.0000

NAS6604-66
Bolt

**

DAS
6
9-89 DAS
28
9-89

BAS
27
9-89

Location

Loc Qty

Loc Code

ST553

104

124328

60

M130388

44

NAS1149F0432P Purchased No

Each 1,562.000

NAS1149F0432P
WASHER

**

DAS
6
9-89

BAS
27
9-89

Location

Loc Qty

Loc Code

ST260a

1000

M133990

1000

ST262

437

M133938

437

st268

125

M132677

125

JAN 28 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐			

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____							
Misidentified ☐	☐ Past Due								

Picklist Print

Thursday, January 28, 2016 9:57:37 AM

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Work Order ID: 141138

141138

Parent Item: 647.1305

647 1305

Parent Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016

Required Date: 2/4/2016

Start Qty: 1.00

Required Qty: 1.00

AN525-10R12

Purchased

No

Each

229.0000

AN525-10R12

Screw

**

DAS

6

9-89

DAS

23

9-89

DAS

27

9-89

Location

Loc Qty

Loc Code

ST329

229

102587

229

Each

2,275.000

NAS1149F0332P

Purchased

No

NAS1149F0332P

Washer

**

DAS

6

9-89

DAS

28

9-89

Location

Loc Qty

Loc Code

GA

396

m133709

396

ST260a

1500

m134055

1500

ST262

379

m133709

4

m133938

375

Each

3,681.000

NAS1149FN832P

Purchased

No

NAS1149FN832P

Washer

**

DAS

6

9-89

DAS

28

9-89

Location

Loc Qty

Loc Code

GA

2117

M133316

16

M133769

2101

ST262

1564

M133709

1564

DAS

27

9-89

JAN 28 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____							
Misidentified ☐	☐ Past Due								

Picklist Print

Thursday, January 28, 2016 9:57:37 AM

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Work Order ID: 141138

141138

Parent Item: 647.1305

647 1305

Parent Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016

DAS 6
Required Date: 2/4/2016

Start Qty: 1.00

Required Qty: 1.00

601.2375 Manufactured No

Each 77.0000

601 2375

Washer

**

DAS

28

9-89

Location

Loc Qty

Loc Code

CCK096

77

91708

77

Each

18.0000

MS21042-3

MS21042L3

Purchased

No

MS21042-3

Nut / use MS21042L3

**

DAS

6

9-89

DAS

28

9-89

Location

Loc Qty

Loc Code

ST304

18

M129682

18

Each

33.0000

MS21042-08

MS21042L08

Purchased

No

MS21042-08

USE MS21042L08

**

DAS

28

9-89

Location

Loc Qty

Loc Code

ST304

25

122815

25

ST306

8

m130388

8

DAS

6

9-89

DAS

27

9-89

JAN 28 2016

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Shop Packet Print

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

Picklist Print

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Work Order ID: 141138

141138

Parent Item: 647.1305

647 1305

Parent Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016

Required Date: 2/4/2016

Start Qty: 1.00

Required Qty: 1.00

MS21042L4

Purchased

No

Each

3,374.000

MS21042L4

Locknut

DAS

6

9-89

DAS

28

9-89

Location

Loc Qty

Loc Code

FP001

41

m133363

41

GA

26

m127813

26

ST007

1500

m134055

1500

ST303

1710

m133769

1710

ST305

97

m130922

97

600.0990

Purchased

No

Each

21.0000

600-0990

Magnabond 6398 Part A

DAS

6

9-89

DAS

28

9-89

Location

Loc Qty

Loc Code

CA2

12

M133800

12

PKG

9

M133938

9

600.0991

Purchased

No

Each

21.0000

600-0991

MAGNOBOND 6398 PART B

DAS

6

9-89

DAS

28

9-89

Location

Loc Qty

Loc Code

CA2

12

m133800

12

PKG

9

m133938

9

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Shop Packet Print

Page 6

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
				OTHER : ☐							

Picklist Print

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Page 7

Work Order ID: 141138

141138

Parent Item: 647.1305

647 1305

Parent Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016

Required Date: 2/4/2016

Start Qty: 1.00

Required Qty: 1.00

600.1012

Purchased No

Each 21.0000

6001012

Sealant PR1425B2 (#654 sem)

**

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

cck017

20

m133800

4

m133938

8

m133992

8

cck018

1

m131364

1

10/30/2015

Each 14.0000

**

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

CCK096

4

m133275

4

5/31/2017

CCK109

10

m133588

10

Each 67.0000

**

DAS
28
9-89

DAS
6
9-89

JAN 28 2016

Location

Loc Qty

Loc Code

CCK094

67

106783

30

91895

31

m123185

3

m125082

3

601.2045

Purchased No

601 2045

RTV/(LOCTITE S98) McMaster p/n: 6641A41

**

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

CCK096

4

m133275

4

5/31/2017

CCK109

10

m133588

10

Each 67.0000

**

DAS
28
9-89

DAS
6
9-89

JAN 28 2016

Location

Loc Qty

Loc Code

CCK094

67

106783

30

91895

31

m123185

3

m125082

3

647.2010

Manufactured No

647 2010

Upper Strut

**

DAS
28
9-89

DAS
6
9-89

JAN 28 2016

Location

Loc Qty

Loc Code

CCK094

67

106783

30

91895

31

m123185

3

m125082

3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____							
Misidentified ☐	☐ Past Due								

Picklist Print

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Page 8

Work Order ID: 141138

141138

Parent Item: 647.1305

647 1305

Parent Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016

Required Date: 2/4/2016

Start Qty: 1.00

Required Qty: 1.00

AN3-15A

Purchased

No

Each

83.0000

AN3-15A

Bolt

**

DAS

6

DAS

28

9-89

9-89

Location

Loc Qty

Loc Code

FG

10

114941

10

ST348

73

M132551

73

Each

4.0000

**

DAS

6

DAS

28

9-89

9-89

Location

Loc Qty

Loc Code

CCK048

4

128326

4

Each

27.0000

**

DAS

6

DAS

28

9-89

9-89

Location

Loc Qty

Loc Code

ST588

27

M127948

27

Each

34.0000

**

DAS

6

DAS

28

9-89

9-89

Location

Loc Qty

Loc Code

ST588

34

M127948

34

647.1403

Manufactured

No

647 1403

Upper Cutter Assembly, U-Channel

91292A080

Purchased

No

91292A080

Screw

**

DAS

6

DAS

28

9-89

9-89

Location

Loc Qty

Loc Code

ST588

27

M127948

27

Each

34.0000

**

DAS

6

DAS

28

9-89

9-89

Location

Loc Qty

Loc Code

ST588

34

M127948

34

93625A300

Purchased

No

93625A300

Locknut

**

DAS

6

DAS

28

9-89

9-89

Location

Loc Qty

Loc Code

ST588

34

M127948

34

JAN 28 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval 'Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Picklist Print

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Page 9

Work Order ID: 141138

141138

Parent Item: 647.1305

647 1305

Parent Item Name: EC145 Cable Cutter System Removable Provisions U Channel Compatible

Start Date: 1/28/2016

Required Date: 2/4/2016

Start Qty: 1.00

Required Qty: 1.00

93475A270

Purchased No

Each 68.0000

93475A270

Washer

BAS
27
9-89

Location

Loc Qty

Loc Code

ST588

68

M127948

68

Each

11.0000

LN9037-08018

Purchased No

LN9037-08018

Screw

Location

Loc Qty

Loc Code

ST563

11

M132173

11

Each

56.0000

LN9025-0820K

Purchased No

LN9025-0820K

Lock Tab Washer

BAS
27
9-89

Location

Loc Qty

Loc Code

ST563

56

M128007

56

Each

1.0000

647.2113

Manufactured No

647-2113

Lower Rail, U-Channel

BAS
27
9-89

Location

Loc Qty

Loc Code

cck111

1

123496

1

Each

1.0000

647.1702

Manufactured No

647-1702

Skid Deflector Assembly

BAS
27
9-89

Location

Loc Qty

Loc Code

CKK033

1

135177

1

BAS
27
9-89

JAN 28 2016

Thursday, January 28, 2016 9:57:38 AM

Shop Packet Print

Page 9

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐			
Misidentified ☐	Past Due ☐																																																																

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE IS PROHIBITED.

NOTES: UNLESS OTHERWISE SPECIFIED

- 1 AFTER INSTALLATION, APPLY F/N 73 A/R TO FILL GAPS AND FILLET EDGES
2. APPLY F/N 74 TO FAYING SURFACES
- 3 AT CUSTOMERS OPTION, INSTALL F/N 77 BY MATCH DRILLING ONTO F/N 1
- 4 INSTALL FOR 647.1301, 647.1302.
- 5 INSTALL FOR 647.1304, 647.1305.
- 6 APPLICABLE WHEN EUROCOPTER P/N 145-250014.11 IS INSTALLED WITH EUROCOPTER CABLE CUTTER FIXED PROVISIONS.
- 7 APPLICABLE WHEN REPLACING EUROCOPTER P/N 145-250074.11
- 8 INSTALL WITH:
647.1304
647.1305
647.1307
647.1308

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	LAST PROTECTIVE REVISION: P13		
N/C	INITIAL RELEASE	08/05/09	P. BRAVO
A	INCORPORATED ECH 02943, 03020, 03048	01/25/11	P. BRAVO
B	INCORPORATED ECH 03919	07/05/13	P. BRAVO
C	INCORPORATED ECH 04059	08/13/13	P. BRAVO
D	INCORPORATED ECH'S 04485, 045021 & 04976	06/17/15	P. BRAVO

1		1	1		1	1		1	14	647.1817	SUPPORT, RH		
1		1	1		1	1		1	13	647.1912	BRACKET, LH		
1		1	1		1	1		1	12	647.1911	BRACKET, RH		
	8	8		8	8			8	11	647.0112	STRUT BRACKET		
								1	10	647.2110	LOWER RAIL		
								1	9	647.2111	UPPER RAIL		
	1	1		1	1			1	8	647.1610	WIPER DEFLECTOR, FWD		
	1	1		1	1			1	7	647.1601	WIPER DEFLECTOR ASSY, AFT		
								2	6	647.1701	SKID DEFLECTOR ASSY		
1		1	1		1	1		1	5	647.3201	GROUNDING CABLE ASSY		
1		1	1		1	1		1	4	647.2201	CROSS ASSY		
1		1	1		1	1		1	3	647.1602	DOUBLER ASSY		
	1	1		1	1			1	2	647.1402	CUTTER ASSY (LOWER)		
								1	1	647.1401	CUTTER ASSY (UPPER)		
X										647.1309	EC145 T2 FIXED PROVISIONS KIT		
	X									647.1308	EC145 T2 REMOVABLE PROVISIONS KIT		
		X								647.1307	EC145 T2 CABLE CUTTERS KIT		
			X							647.1306	FIXED PROVISIONS KIT U CHANNEL		
				X						647.1305	REMOVABLE PROVISIONS KIT U CHANNEL		6
					X					647.1304	EC145 CABLE CUTTERS KIT U CHANNEL COMPATIBLE		6
						X				647.1303	FIXED PROVISIONS KIT		
							X			647.1302	REMOVABLE PROVISIONS KIT		
								X		647.1301	EC145 CABLE CUTTERS KIT		
.1309	.1308	.1307	.1306	.1305	.1304	.1303	.1302	.1301	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.

BOM Table(Restructured)

QTY	ORIGINAL DATE RMD-DA-YR 07/06/09	DART AEROSPACE 3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760) 724-5300 APICAL INDUSTRIES, INC. dba DART AEROSPACE
NEXT ASSY (S)	DRAWN BY R. ROSANO	
	CHECKED D. BARKER	
	DRAWING APPROVAL P. BRAVO	
	DESIGN 08/05/09	
	CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS .000 2 PLACE DECIMALS .00 1 PLACE DECIMALS .000		SEE CAGE CODE B 07A26
		DWG NO. 647.1300
		SCALE NONE
		REV. D
		SHEET 1 OF 10

6-1-28
14/138

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE IS PROHIBITED.

	4	4		4	4		4	4	51	601.3209	LOCKNUT	MS21042L4	
1	4	5	1	4	5	1	8	9	50	601.2973	LOCKNUT	MS21042-08	
27	19	46	27	19	46	27	18	45	49	601.2943	LOCKNUT	MS21042-3	
	3	3		3	3		3	3	48	601.2375	WASHER		
2	8	10	2	8	10	2	16	18	47	601.2764	WASHER	NAS1149FN832P	
62	42	104	62	42	104	62	40	102	46	601.1607	WASHER	NAS1149F0332P	
1		1	1		1	1		1	45	601.2525	SCREW	MS27039-0807	
4		4	4		4	4		4	44	601.1952	SCREW	MS27039-1-20	
							4	4	43	601.3010	SCREW	MS27039-0810	
	4	4		4	4		4	4	42	601.3224	SCREW	ANS25-10R12	
6		6	6		6	6		6	41	601.1365	SCREW	MS27039-1-10	
3		3	3		3	3		3	40	601.2198	SCREW	MS27039-1-07	
	3	3		3	3		3	3	39	601.2999	SCREW		
18		18	18		18	18		18	38	601.2459	SCREW	MS27039C1-06	
	4	4		4	4		4	4	37	601.1622	SCREW	MS27039-1-14	
10		10	10		10	10		10	36	601.2051	SCREW	MS24694C52	
2		2	2		2	2		2	35	601.2823	BOLT	AN3-4A	
1		1	1		1	1		1	34	601.1324	BOLT	AN4CH6A	
	2	2		2	2		2	2	33	601.1874	BOLT	AN3C10A	
	12	12		12	12		16	16	32	601.2826	BOLT	AN3-11A	
	8	8		8	8		8	8	31	601.2638	WASHER	NAS1149F0432P	
	4	4		4	4		4	4	30	601.3002	BOLT	NAS6604-66	
2		2	2		2	2		2	29	647.1811	SPACER		
4		4	4		4	4		4	28	647.2511	NUT		
4		4	4		4	4		4	27	647.2510	SLEEVE		
13		13	13		13	13		13	26	647.1812	SHIM		
4		4	4		4	4		4	25	647.1910	CLIP		
1		1	1		1	1		1	24	647.1810	NOSE DOOR DOUBLER		
1		1	1		1	1		1	23	647.1818	NOSE DOOR SPACER		
2		2	2		2	2		2	22	647.1813	ANGLE		
1		1	1		1	1		1	21	647.1913	TEE		
1		1	1		1	1		1	20	647.1814	GUSSET, LH		
1		1	1		1	1		1	19	647.1815	GUSSET, RH		
1		1	1		1	1		1	18	647.1915	SUPPORT ANGLE		
	2	2		2	2		2	2	17	647.2011	LOWER STRUT		
1		1	1		1	1		1	16	647.1914	BRACKET		
1		1	1		1	1		1	15	647.1816	SUPPORT, LH		
.1309	.1308	.1307	.1306	.1305	.1304	.1303	.1302	.1301	FIND #	PART #	DESCRIPTION	MATL	SPEC.

BOM Table(Restructured)

ORIGINAL DATE 07/04/09	 DART AEROSPACE 3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300 APLAL BRADWELL, INC. PRO-TOOL ASSOCIATES		
DRAWN BY P. ROSAND			
CHECKER D. BARNER			
DRAWING APPROVAL P. BRAVO 08/05/09			
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.03 3 PLACE DECIMALS ±.010 ANGLES ± .5°			
SIZE B	CAGE CODE 07M26	DWG. NO. 647.1300	REV. D
SCALE NONE		SHEET 2 OF 10	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE IS PROHIBITED.

	2	2							89	647.1703	T2 SKID DEFLECTOR ASSY		
	8	8							88	601.3812	LOCK TAB	LN9023AB-1.4544.9	
				2	2				87	647.1702	SKID DEFLECTOR ASSY		
	1	1			1	1			86	647.2113	LOWER RAIL (U CHANNEL KIT)		
	8	8			8	8			85	601.3655	WASHER	LN9025-0820K	
	8	8			8	8			84	601.3654	SCREW	LN9037-08018	
1		1	1			1			83	647.2112	UPPER U CHANNEL		
	8	8			8	8			82	601.3653	WASHER	93475A270	
	4	4			4	4			81	601.3652	LOCKNUT	93625A300	
	4	4			4	4			80	601.3651	SCREW	91292A080	
	1	1			1	1			79	647.1403	CUTTER ASSY (UPPER U CHANNEL)		
	5	5			5	5			78	601.3650	BOLT	AN3-15A	
REF	REF	REF	REF	REF	REF	REF	REF	REF	77	647.5701	GPS MOUNT KIT		
2		2	2			2	2		76	601.1954	SCREW	MS27039-1-17	
	2	2			2	2		2	75	647.2010	UPPER STRUT		
1	1	1	1	1	1	1	1	1	74	601.2045	RTV	LOCTITE 598	
1	1	1	1	1	1	1	1	1	73	600.1012	SEALANT	PR-1425 CLASS B	
1	1	1	1	1	1	1	1	1	72	600.0991	MAGNOBOND 6398 PART B		
1	1	1	1	1	1	1	1	1	71	600.0990	MAGNOBOND 6398 PART A		
4		4	4			4	4		70	601.3012	SCREW	MS27039-1-15	
2		2	2			2	2		69	601.3004	CAMLOC STUD		
2		2	2			2	2		68	601.3005	CAMLOC RETAINER		
2		2	2			2	2		67	601.3006	CAMLOC RECEPTACLE		
3 FT.		3 FT.	3 FT.			3 FT.	3 FT.		66	601.3011	P-SEAL		
1.1 FT.		1.1 FT.	1.1 FT.			1.1 FT.	1.1 FT.		65	601.3007	GROMMET	MS21266-2N	
2		2	2			2	2		64	601.3008	INSERT	NAS1834C3-300	
12		12	12			12	12		63	601.2364	RIVET	CR3213-4-8	
16		16	16			16	16		62	601.2468	RIVET	CR3213-4-7	
11		11	11			11	11		61	601.2991	RIVET	CR3213-4-6	
2		2	2			2	2		60	601.1039	RIVET	CR3213-4-2	
8		8	8			8	8		59	601.1183	RIVET	CR3213-4-5	
22		22	22			22	22		58	601.0790	RIVET	CR3213-4-3	
8		8	8			8	8		57	601.2995	RIVET	CR3213-6-6	
4		4	4			4	4		56	601.1915	RIVET	CR3213-4-4	
12		12	12			12	12		55	601.2207	NUTPLATE RIVET	CCR2645S-3-03	
4		4	4			4	4		54	601.1983	NUTPLATE RIVET	CCR2745S-3-03	
12		12	12			12	12		53	601.2980	NUTPLATE RIVET	CCR2645S-3-04	
12		12	12			12	12		52	600.0795	NUTPLATE	MS21047-3	
.1309	.1308	.1307	.1306	.1305	.1304	.1303	.1302	.1301	FIND #	PART #	DESCRIPTION	MATL	SPEC.

BOM Table (Restructured)

ORIGINAL DATE
07/04/09
DRAWN BY
R. ROSANO
CHECKER
D. BARBER
DRAWING APPROVAL
P. BRAVO
07/04/09
CONTRACT NO.

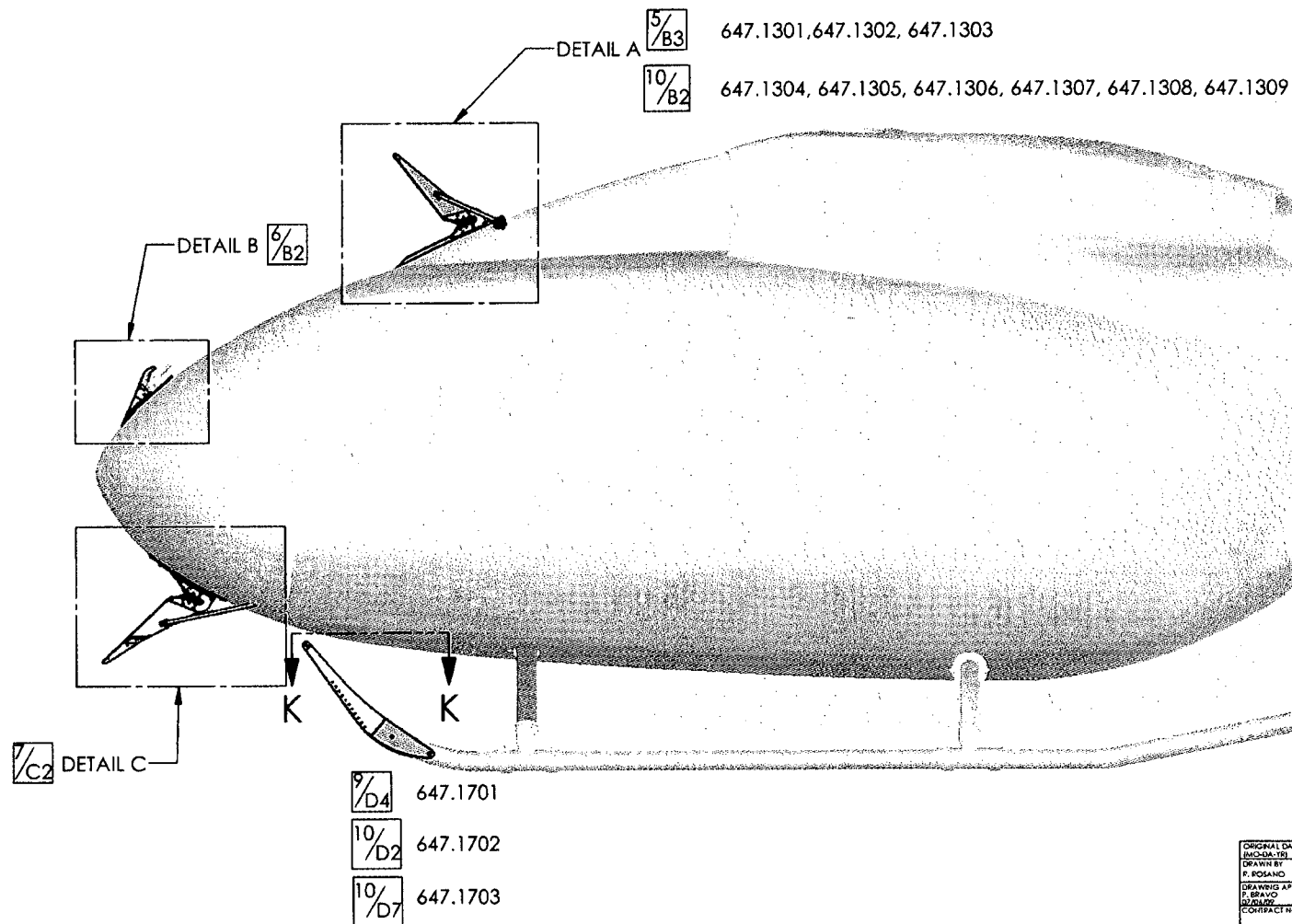
DART AEROSPACE 3030 ENTERPRISE CT., SUITE A, VISTA, CA. 92081 (760)-724-5300
AERIAL INDUSTRIES, INC. SPECIALTY AIRCRAFT FABRICATOR

EC145 CABLE CUTTERS KIT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ±.5°

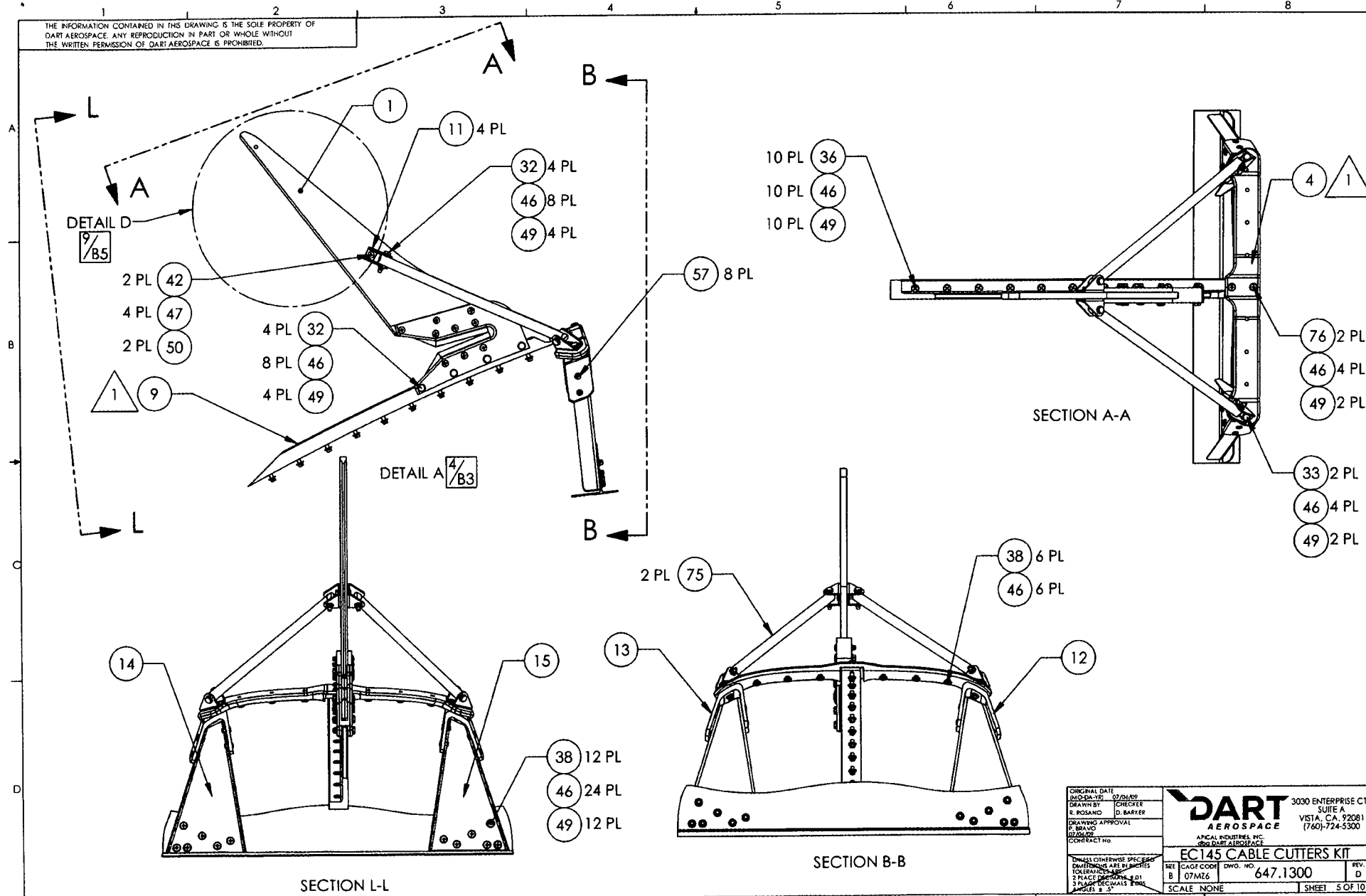
REV. D
SCALE NONE
SHEET 3 OF 10

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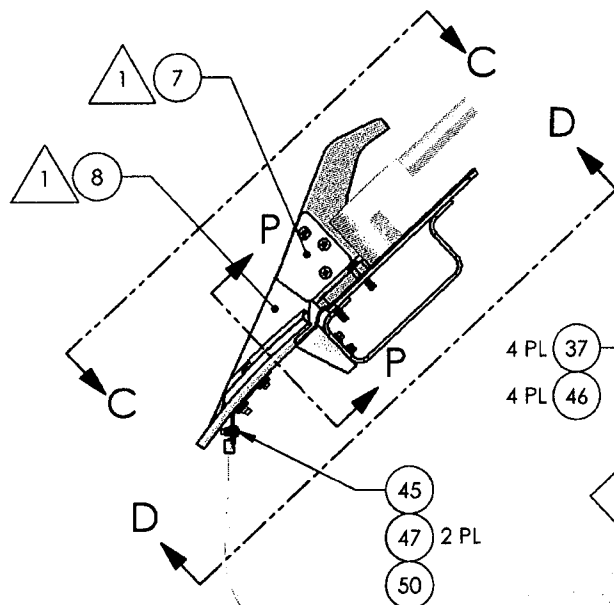


ORIGINAL DATE (DD/MYY)	07/04/97	DART AEROSPACE 3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760) 724-5300 APICAL INDUSTRIES INC. (800) DART AEROSPACE
DRAWN BY	P. ROSANO	
CHECKED BY	D. BARKER	
DRAWING APPROVAL	E. BRAYO	
CONTRACT NO.		EC145 CABLE CUTTERS KIT REV. D SCALE: NONE SHEET 4 OF 10
DIMENSIONS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .001 ANGLES ± .5°		REV. D SCALE: NONE SHEET 4 OF 10

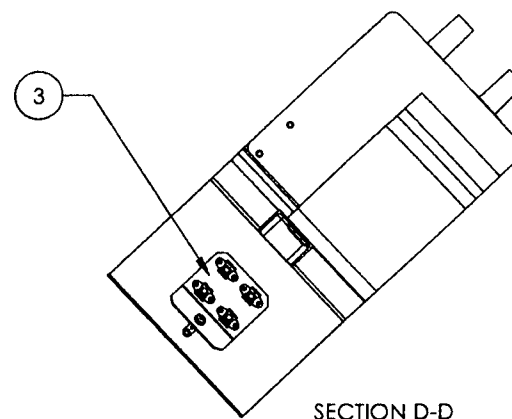
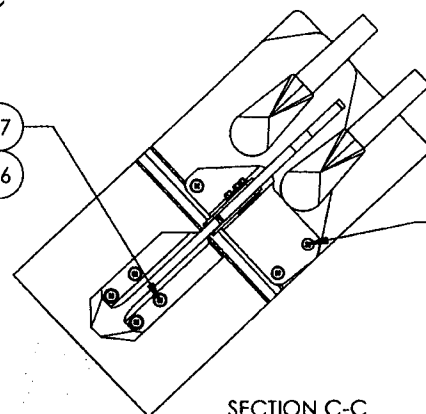
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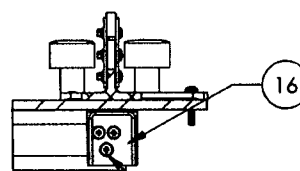
4 PL 37
4 PL 46



5

DETAIL B $\frac{4}{B2}$

34



40 3 PL
46 6 PL
49 3 PL

ORIGINAL DATE 07/04/00		3030 ENTERPRISE CT., SUITE A, VISTA, CA 92081 (760) 724-5300	
DRAWN BY R. ROSANO	CHECKER D. BARKER	DART AEROSPACE APICAL INDUSTRIES INC. ©2000 DART AEROSPACE	
DRAWING APPROVAL P. BRAVO			
CONTRACT NO.		FC145 CABLE CUTTERS KIT DATE: 07/04/00 DWG. NO: 647.1300 SCALE: NONE SHEET: 6 OF 10	

ORIGINAL DATE (R/O-DA-TR)	07/06/09	 3030 ENTERPRISE CT SUITE A VISTA, CA. 92081 (760)-724-5300
DRAWN BY	CHECKER	
R. POHANO	P. BARBER	
DRAWING APPROVAL		
P. BRAVO		
QUOTED		
CONTRACT NO.		
SPECIALS OTHERWISE SPECIFIED 1. DIMENSIONS ARE IN INCHES 2. TOLERANCES ARE: 3. DIMENSIONS > 1" ± .01 4. PLACE DECIMALS > 2"		APICAL HOUSINGS INC. 100 DUNE ASTORIAL EC145 CABLE CUTTERS KIT 647.1300
SIZE	CAGE CODE	DWG. NO.
B	07M76L	647.1300
SCALE		SHEET 7 OF 10

1 2 3 4 5 6 7 8

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A

B

C

D

H

24

65

55 4 PL

SECTION G-G $\frac{1}{2}$ C3

52 8 PL

53 12 PL

SHOWN 19

OPPOSITE 20

4 PL 55

2 PL 60

2 PL 66

2 PL 69

2 PL 68

2 PL 67

2 PL 64

2 PL 44 OR 70

2 PL 46

23 1

9/B2

63 4 PL

62 16 PL

59 8 PL

44 OR 70 2 PL

46 2 PL

SECTION H-H

EC145 CABLE CUTTERS KIT

ORIGINAL DATE 07/04/07
DRAWN BY CHECKED
P. ROSAND D. BARRETT
DRAWING APPROVAL
P. BRAVO
07/04/07
CONTRACT No.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS .001
3 PLACE DECIMALS .0005
ANGLES .1°

SCALE NONE

SHEET 8 OF 10

DART AEROSPACE
3030 ENTERPRISE CT
SUITE A
VISTA, CA 92081
(760)-724-5300

EC145 CABLE CUTTERS KIT
CAGE CODE 07M26
DWG NO. 647.1300
REV. D

ORIGINAL DATE
(NO-DIA-178) 07/03/97
DRAWN BY
P. RICHARD
CHECKED BY
D. BARBER
DRAWING APPROVAL
P. BRAVO
CONTRACT No.

The logo for DART Aerospace, featuring the word "DART" in a large, bold, sans-serif font, with "AEROSPACE" in a smaller, all-caps, sans-serif font directly beneath it.

3030 ENTERPRISE CT
SUITE A
VIAIA, CA. 92081
(760)-724-5300

APCA INDUSTRIES INC.
CRO DART AEROSPACE

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCE ARE:
1. PLACE DECIMALS .01
2. PLACE DECIMALS .0005

EC145 CABLE CUTTERS KIT

509 CAGE CODE
B 07M26

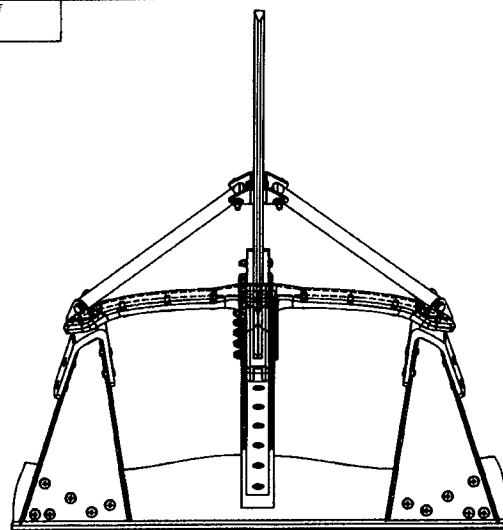
DWG. NO.
647.1300

REV.
0

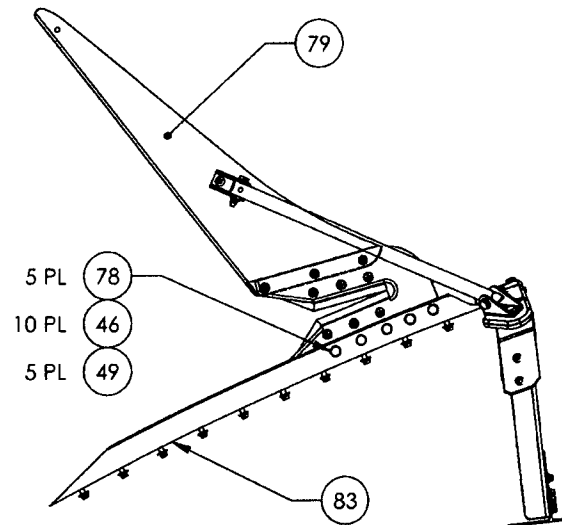
SCALE NONE

SHEET 8 OF 10

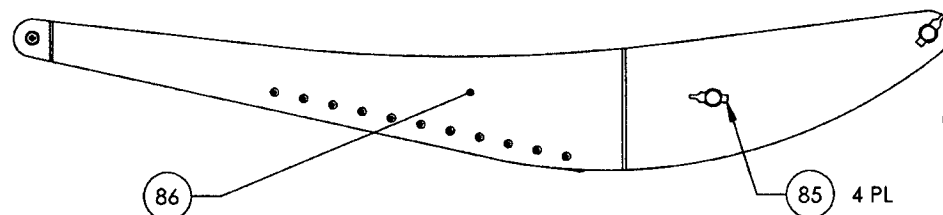
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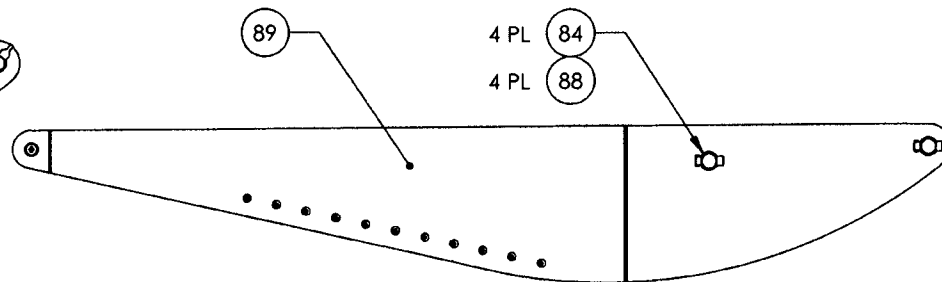
DETAIL A
WITH U CHANNEL $\frac{4}{B3}$



5 PL 78
10 PL 46
5 PL 49



85 4 PL



647.1703
DETAIL K
T2 CONFIGURATION



4 PL 84

647.1702
DETAIL K
ALTERNATE CONFIGURATION
FOR P/N 647.1303

$\frac{4}{B3}$

7

ORIGINAL DATE 07/04/09
DRAWN BY CHUCKEY
R. ROSANO D. BARNER
DRAWING APPROVAL
P. BRAVO
07/04/09
CONTRACT NO.

DART AEROSPACE
3030 ENTERPRISE CT., SUITE A
VISTA, CA. 92081
(760)-724-5300

APICAL INDUSTRIES INC.
(P/N) DART AEROSPACE

EC145 CABLE CUTTERS KIT

SIZE B CAGE CODE 07M16 DWG. NO. 647.1300 REV. D

SCALE NONE SHEET 10 OF 10

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ± .01
3 PLACE DECIMALS ± .005
ANGLES ± .5°

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NOTES: UNLESS OTHERWISE SPECIFIED

- 1 AFTER INSTALLATION, APPLY F/N 73 A/R TO FILL GAPS AND FILLET EDGES
- 2 APPLY F/N 74 TO FAYING SURFACES
- 3 AT CUSTOMERS OPTION, INSTALL F/N 77 BY MATCH DRILLING ONTO F/N 1
- 4 INSTALL FOR 647.1301, 647.1302.
- 5 INSTALL FOR 647.1304, 647.1305.
- 6 APPLICABLE WHEN EUROCOPTER P/N 145 250014.11 IS INSTALLED WITH EUROCOPTER CABLE CUTTER FIXED PROVISIONS.
- 7 APPLICABLE WHEN REPLACING EUROCOPTER P/N 145-250074.11
- 8 INSTALL WITH:
647.1304
647.1305
647.1307
647.1308

REFERENCE ONLY

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	LAST PROTOTYPE REVISION: P30		N/C
2	INITIAL RELEASE	05/02/07	P. BRAVO
A	INCORPORATED ECH 02943, 03020, 03048	01/25/11	P. BRAVO
B	INCORPORATED ECH 03919	07/05/13	P. BRAVO
C	INCORPORATED ECH 04059	06/13/13	P. BRAVO
D	INCORPORATED ECHS 04485, 04921 & 04926	04/17/15	P. BRAVO

1		1	1		1	1		1	14	647.1917	SUPPORT RH		
1		1	1		1	1		1	13	647.1912	BRACKET LH		
1		1	1		1	1		1	12	647.1911	BRACKET RH		
	8	8		8		8		8	11	647.0112	STRUT BRACKET		
								1	10	647.2110	LOWER RAIL		
								1	9	647.2111	UPPER RAIL		
	1	1		1		1		1	8	647.1310	WIPER-DEFLECTOR, FWD		
	1	1		1		1		1	7	647.1309	WIPER DEFLECTOR ASSY.		
								2	6	647.1301	SHD DEFLECTOR ASSY		
								1	5	647.3201	GROUNDING CABLE ASSY		
								1	4	647.2201	CROSS ASSY		
								1	3	647.1602	DOUBLER ASSY		
	1	1		1		1		1	2	647.1402	CUTTER ASSY (LOWER)		
								1	1	647.1401	CUTTER ASSY (UPPER)		
X										647.1309	EC145 TO FIXED PROVISIONS KIT		
	X									647.1308	EC145T2 REMOVABLE PROVISIONS KIT		
		X								647.1307	EC145T2 CABLE CUTTERS KIT		
			X							647.1306	FIXED PROVISIONS KIT U CHANNEL		
				X						647.1305	REMOVABLE PROVISIONS KIT U CHANNEL		
					X					647.1304	EC145 CABLE CUTTERS KIT U CHANNEL COMPATIBLE		
						X				647.1303	FIXED PROVISIONS KIT		
							X			647.1302	REMOVABLE PROVISIONS KIT		
								X		647.1301	EC145 CABLE CUTTERS KIT		
1309	1308	1307	1306	1305	1304	1303	1302	1301	FIND #	PART #	DESCRIPTION	MATL	SPEC.

BOM Table(Restructured)

QTY	REVISION DATE	REVISION DESCRIPTION	REVISION BY	REVISION DATE
NEXT ASSY IS:	05/02/07	INITIAL RELEASE	P. BRAVO	05/02/07
	01/25/11	INCORPORATED ECH 02943, 03020, 03048	P. BRAVO	01/25/11
	07/05/13	INCORPORATED ECH 03919	P. BRAVO	07/05/13
	06/13/13	INCORPORATED ECH 04059	P. BRAVO	06/13/13
	04/17/15	INCORPORATED ECHS 04485, 04921 & 04926	P. BRAVO	04/17/15

PARTS LIST	
DART AEROSPACE 3030 ENTERPRISE CT., SUITE A VISALIA, CA 93281 (760)724-5300	
EC145 CABLE CUTTERS KIT 647.1300	

REFERENCE ONLY

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	4	4		4	4		4	4	51	601.3209	LOCKNUT	MS21042L4	
1	4	5	1	4	5	1	8	9	50	601.2970	LOCKNUT	MS21042-00	
27	19	46	27	19	46	27	18	45	49	601.2943	LOCKNUT	MS21042-3	
	3	3		3	3		3	3	48	601.2375	WASHER		
2	8	10	2	8	10	2	16	18	47	601.2724	WASHER	NAS1149FN832P	
62	42	104	62	42	104	62	40	102	46	601.1607	WASHER	NAS1149F0332P	
1		1	1		1	1		1	45	601.2525	SCREW	MS27039-0807	
4		4	4		4	4		4	44	601.1952	SCREW	MS27039-1-20	
								4	43	601.3010	SCREW	MS27039-0810	
	4	4		4	4		4	4	42	601.3224	SCREW	AN525-10R12	
6		6	6		6	6		6	41	601.1365	SCREW	MS27039-1-10	
3		3	3		3	3		3	40	601.2198	SCREW	MS27039-1-07	
	3	3		3	3		3	3	39	601.2999	SCREW		
18		18	18		18	18		18	38	601.2459	SCREW	MS27039C1-06	
	4	4		4	4		4	4	37	601.1622	SCREW	MS27039-1-14	
10		10	10		10	10		10	36	601.2051	SCREW	MS24694C52	
2		2	2		2	2		2	35	601.2823	BOLT	AN3-4A	
1		1	1		1	1		1	34	601.1324	BOLT	AN4CH6A	
	2	2		2	2		2	2	33	601.1874	BOLT	AN3C10A	
	12	12		12	12		16	16	32	601.2826	BOLT	AN3-11A	
	8	8		8	8		8	8	31	601.2444	WASHER	NAS1149F0432P	
	4	4		4	4		4	4	30	601.2003	BOLT	NAS1149F0432P	
2		2	2		2	2		2	29	647.1811	SPACER		
4		4	4		4	4		4	28	647.2511	NUT		
4		4	4		4	4		4	27	647.2510	SLEEVE		
13		13	13		13	13		13	26	647.1812	SHIM		
4		4	4		4	4		4	25	647.1710	CLIP		
1		1	1		1	1		1	24	647.1810	NOSE DOOR DOUBLER		
1		1	1		1	1		1	23	647.1818	NOSE DOOR SPACER		
2		2	2		2	2		2	22	647.1813	ANGLE		
1		1	1		1	1		1	21	647.1913	TEE		
1		1	1		1	1		1	20	647.1814	GUSSET, LH		
1		1	1		1	1		1	19	647.1815	GUSSET, RH		
1		1	1		1	1		1	18	647.1915	SUPPORT ANGLE		
	2	2		2	2		2	2	17	642.2011	LOWER STRUT		
1		1	1		1	1		1	16	647.1914	BRACKET		
1		1	1		1	1		1	15	647.1816	SUPPORT, LH		
.1309	.1308	.1307	.1306	.1305	.1304	.1303	.1302	.1301	FIND #	PART #	DESCRIPTION	MAT#	SPEC.

FORM 1000 (STRUCTURED)

ORIGINAL DATE 07/26/07	DESIGNED BY R. ROSANO	CHECKED BY D. BAKER	DART AEROSPACE 3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760) 724-5500
DRAWING APPROVAL P. BIVARD 08/01/07	CONTRACT NO.		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE .001 2 PLACE DECIMALS ARE .01 ANGLES ARE IN DEGREES			
BOM CASE CODE: 647.1300 BOM CASE CODE: 647.1300 SCALE: NONE			

